

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number
WO 2004/003592 A1

(51) International Patent Classification⁷: G01V 3/14,
G01R 33/20

(21) International Application Number:
PCT/AU2003/000802

(22) International Filing Date: 26 June 2003 (26.06.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
PS 3228 26 June 2002 (26.06.2002) AU

(71) Applicant (for all designated States except US): QR-
SCIENCES TECHNOLOGIES PTY LTD [AU/AU];
8-10 Hamilton Street, Cannington, Western Australia 6107
(AU).

(72) Inventors; and

(75) Inventors/Applicants (for US only): RUDAKOV, Taras,
Nikolaevitch [AU/AU]; 7 Reen Street, St James, West-
ern Australia 6102 (AU). FLEXMAN, John, Harold
[AU/AU]; 11 Thomas Way, Kardinya, Western Australia
6163 (AU). MIKHALTSEVITCH, Vassili, Timofeevitch

[AU/AU]; 15/1055 Albany Highway, St James, Western
Australia 6102 (AU). HAYES, Peter, Alaric [AU/AU];
14 Ken Street, Wembley Downs, Western Australia 6019
(AU). CHISHOLM, Warrick, Paul [AU/AU]; 2A Bur-
saria Crescent, Ferndale, Western Australia 6148 (AU).
AITKEN, Christopher, Norman [AU/AU]; 8-10 Hamil-
ton Street, Cannington, Western Australia 6107 (AU).

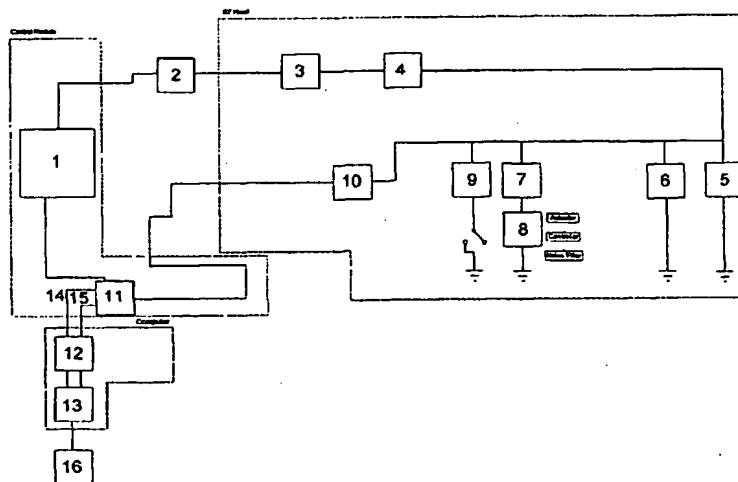
(74) Agent: WRAY & ASSOCIATES; Level 4, The Quadrant,
1 William Street, Perth, Western Australia 6000 (AU).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (regional): ARIPO patent (GH, GM,
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,

[Continued on next page]

(54) Title: SCANNER FOR NUCLEAR QUADRUPOLE RESONANCE MEASUREMENTS AND METHOD THEREFOR



(57) Abstract: An NQR scanner for detecting the presence of a substance containing quadrupole nuclei within an object. A pulse generating means (1) generates pulse sequences that are used to irradiate the object in a pulsed magnetic field at a requisite NQR frequency for the substance to be detected. A high power RF transmit amplifier (2) amplifies the signal to produce sufficient magnetic field strength to irradiate a scan volume within which the object is disposed for detection purposes and cause an NQR transition to a detectable level within the substance if present within the object. A method for detecting the presence of a substance containing quadrupole nuclei within an object is also described

WO 2004/003592 A1